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26508  
S/044/61/000/004/022/033  
C111/C222

AUTHOR: Vinokurov, V.R.

TITLE: On the boundedness of the solution of a system of linear Volterra integral equations with a periodic matrix

PERIODICAL: Referativnyy zhurnal. Matematika, no. 4, 1961, 69, abstract 4 B 366. ("Uch. zap. Ural'skogo un-ta", 1960, vyp 23, no. 2, 3-9)

TEXT: The author considers the system of integral equations

$$y(x) = f(x) + \int_0^x K(x,s)x(s)ds, \quad (1)$$

where  $y, f(x)$  are  $n$ -dimensional vectors, and  $K(x,s)$  is a quadratic matrix of  $n$ -th order. It is assumed that the elements  $K_{ij}(x,s)$  of the matrix  $K(x,s)$  satisfy the following conditions:

$K_{ij}(x,s)$  are continuous for  $0 \leq s < \infty < \omega$ .

$K_{ij}(x,s) = 0$  for  $0 \leq x < s < \omega$ ,

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On the boundedness of the solution ...

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$$K_{ij}(x + \omega, s + \omega) = K_{ij}(x, s) \quad \text{for } 0 \leq s \leq x < \infty,$$

$$|K_{ij}(x, s)| \leq M e^{\alpha(x-s)} \quad \text{for } 0 \leq s \leq x < \infty.$$

The norm of the vector  $g(x)$  means  $\sup |g^{(i)}(x)|$  for  $i = 1, 2, \dots, n$ ,  $0 \leq x < \infty$ . The solution  $y(x)$  of (1) is called bounded if it is bounded with respect to the norm for arbitrary continuous vector functions  $f(x)$  bounded with respect to the norm. Amongst others the author proves the following conditions for the boundedness of the solutions. In order that the solution of (1) is bounded it is necessary and sufficient that the partial sums of the series

$$\sum_{k=0}^{\infty} \int_0^{\omega} |R_{ij}(x + k\omega, s)| ds$$

are bounded for all  $x \in [0, \omega]$  by one and the same number. Here  $R_{ij}(x, s)$  are elements of the resolvent of the matrix  $K(x, s)$ . In order that the solution is bounded it is sufficient that for  $0 \leq x, s \leq \omega$  the partial

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On the boundedness of the solution ...

sums of the series  $\sum_{k=0}^{\infty} |R_{ij}(x + k\omega, s)|$  are bounded by one and the

same number, and it is necessary that for  $0 \leq x \leq \omega$  the partial sums of

the series  $\sum_{k=0}^{\infty} \int_0^{\omega} |R_{ij}(x + k\omega, s)| ds$  are bounded by one and the same

number. Furthermore, the author proposes a mark which generalizes the well-known mark of Lyapunov for the stability of the solution of a linear system of differential equations with periodic coefficients.

[Abstracter's note : Complete translation.]

Card 3/3

VINOKUROV, V.R. (Orsk)

Approximation of quasi-linear integral Volterra equations by  
algebraic equations. Izv. vyz. ucheb.zav.; mat. no.6839-48 '63  
(MIRA 1738)

VINOKUROV, V.R.

Bounded solutions and limiting cycles of a system of Volterra  
integral equations. Uch. zap. Orsk. gos. ped. inst. no. 5:32-49  
'63. (MIRA 18:3)

L 56467-65 EWT(d) IJP(c)

ACCESSION NR: AP5015849

UR/0140/65/000/003/0046/0050  
517.94

AUTHOR: Vinokurov, V. R. (Orsk)

TITLE: Method for approximating unbounded solutions of a system of quasilinear Volterra integral equations

SOURCE: <sup>14</sup>IVUZ. Matematika, no. 3, 1965, 46-50

TOPIC TAGS: integral equation, approximation calculation

ABSTRACT: The author proves the following Theorem: Suppose the system

$$\dot{y}_i(x_n) = f(x_n) + \sum_{p=0}^{n-1} \int_{t_p}^{t_{p+1}} K(x_n, x_p, y_i(x_p)) y_i(x_p) ds, \quad (1)$$

is uniformly stable; see author's previous paper (Approksimatsiya kvazilineynykh integral'nykh uravneniy Vol'terra algebrai beskimi uravneniyami. Izv. vuzov, Matem., No. 6 (1963), 1963). Also, suppose for a  $\mu \leq x \leq \infty$  sufficiently small  $\mu$  and  $|s_1 - s_2|$  and certain positive, monotone increasing functions  $\varphi_i(x)$  ( $i = 1, 2, \dots, l$ ) and  $\alpha > 0$  the following conditions are satisfied:

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1. The solutions of systems

$$v_i(x) = f(x) + \sum_{p=0}^{n-1} \int_{c_p}^{c_{p+1}} K(x, c_p + \alpha) v_i(\alpha) d\alpha + \int_{c_n}^x K(x, \alpha) v_i(\alpha) d\alpha \quad (2)$$

and (1)  $\|y_1(x)\| \leq \varphi_1(x)$ ,  $\|y_2(x)\| \leq \varphi_2(x)$ .

2.  $\|K[x, s, y_1(s)] - K[x, s, y_2(s)]\| \leq L(x, s) \varphi_2(s) \|y_1(s) - y_2(s)\|$ , where  $L(x, s)$  does not decrease in  $s$ .

3.  $\|K[x_1, s_1, y(s)] - K[x, s_2, y(s)]\| \leq \varphi_3(s) |s_1 - s_2|$ .

4.  $\|K[x, s, y(s)]\| \leq \varphi_4(x)$ .

5.  $\|K[x_1, s, y(s)] - K[x_2, s, y(s)]\| \leq \varphi_5(x_1) \varphi_5(s) |x_1 - x_2|$  ( $x_1 > x_2$ )

6.  $\|f(x_1) - f(x_2)\| \leq \varphi_6(x_1) |x_1 - x_2|$  ( $x_1 > x_2$ )

7.  $\varphi(x) = \max\{\varphi_1(x), \varphi_2(x), \varphi_3(x)\}$  ( $i = 1, 2, 3, 4, 5, 6, 7$ ) satisfies

$$\int_a^x \frac{dx}{|\varphi(x)|^p} < \infty \quad (3)$$

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ACCESSION NR: AP5015849

8.  $\sum_{p=0}^{n-1} a_p^{1-p} L(x_n, x_p) < L$ , where  $Aa_n < h_n < Ba_n$ ,  $A$  and  $B$  are positive numbers and  $h_n$  satisfies the system

$$h_m^{1h} = \frac{Mh}{\varphi(h_0 + h_1 + \dots + h_m)} \quad (m = 0, 1, 2, \dots), \quad (4)$$

Then  $\|y_1(x) - y_2(x_m)\| \rightarrow 0$  as  $h \rightarrow 0$  uniformly in  $m = 0, 1, 2, \dots$  and  $x_m \leq x \leq x_{m+1}$ .

Here system (2) is a rewritten form of

$$y(x) = f(x) + \int_a^x K(x, s, y(s)) y(s) ds, \quad (5)$$

where  $y(x)$  and  $f(x)$  are  $n$ -dimensional vectors,  $K(x, s, y)$  is an  $n$ -th order matrix, constant matrix  $K(x, s, y) = K(x, s)$ . The author gives several illustrative examples. Orig. art. has: 17 formulas.

ASSOCIATION: none

SUBMITTED: 02Nov63

NO REF SOV: 003

Card 3/3

ENCL: 00

OTHER: 000

SUB CODE: MA



VINOKUROV, V.R.

Stability of solutions of a system of Volterra integral equations  
of the second order. Izv.vys.ucheb.zav.; mat. no.1:23-34 '59.  
(MIRA 12:2)

1. Ural'skiy gosudarstvennyy universitet imeni A.M. Gor'kogo.  
(Integral equations)

VINOKUROV, V.R.

Stability of solutions of a system of Volterra integral equations  
of the second order. Part 2. Izv.vys.ncheb.sav.; mat. no.2:50-  
58 '59. (MIRA 12:5)

1. Ural'skiy gosudarstvennyy universitet im. A.M.Gor'kogo.  
(Integral equations)

VINOGRADOV, V.R., Cand Phys-Math Sci <sup>1950</sup> "Stability of the solution  
of the system of <sup>Walter</sup> integral equations." Sverdlovsk, 1950. 3 pp  
(Min of Higher Education USSR. Ural Stat U in Sverdlovsk),  
150 copies (VI, 27-28, 112)

- 3 -

16(1)

AUTHOR:

Vinokurov, V.R.

SOV/140-59-2-5/30

TITLE:

On the Stability of the Solution of a System of Volterra Integral Equations of Second Kind. II (Ob ustoychivosti resheniya sistemy integral'nykh uravneniy Vol'terra 2 roda. II)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1959, Nr 2, pp 50-58 (USSR)

ABSTRACT:

In the present continuation of [Ref 1] the author considers the systems

$$(1) \quad y(x) = \int_a^x \{K(x,s) + H(x,s,y(s))\} y(s) ds$$

and

$$(2) \quad y(x) = f(x) + \int_a^x \{K(x,s) - H(x,s,y(s))\} y(s) ds$$

There hold the notations and assumptions of [Ref 1].

Theorem: For  $|y| < \eta$  and  $a \leq s \leq x < +\infty$  let  $|K(x,s) + H(x,s,y)| \leq L(x,s)$ , where the kernel  $L(x,s)$  is stable and  $\eta$  is sufficiently

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On the Stability of the Solution of a System of  
Volterra Integral Equations of Second Kind. II

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small. Then the solution of (1) is stable.

Theorem: For  $|y| < \eta$ ,  $\eta$  - sufficiently small, and  $a \leq x < +\infty$  let

$$|H_{ij}[x, s, y^{(1)}, y^{(2)}, \dots, y^{(n)}]| \leq L_{ij}(x, s) E_{ij}[y^{(1)}, y^{(2)}, \dots, y^{(n)}],$$

where

$$\lim_{\eta \rightarrow 0} E_{ij}[y^{(1)}, \dots, y^{(n)}] = 0$$

$$\sum_{k=1}^n |y^{(k)}| \rightarrow 0$$

$$\text{and } \int_a^x L_{ij}(x, s) ds \leq L \quad (i, j = 1, 2, \dots, n). \text{ Then the solution of (1)}$$

is stable if  $K(x, s)$  is stable.

The third theorem gives conditions of stability which are

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On the Stability of the Solution of a System of  
Volterra Integral Equations of Second Kind. II

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combined with a Lyapunov function.

The fourth theorem contains conditions for the instability  
of the solution of (1).

There are 2 Soviet references.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet imeni A.M.Gor'kogo (Ural  
State University imeni A.M.Gor'kiy)

SUBMITTED: March 17, 1958

Card 3/3

VINOKUROV, V.R. (g.Orsk)

Stability of the solution of an infinite system of algebraic equations  
derived from the approximation of Volterra type linear integral  
equations. Izv. vys. ucheb. zav.; mat no.4:33-43 '63.  
(MIRA 16:10)

VINOKUROV, V.R. (Orsk)

Approximation over an infinite interval of a system of linear  
integral Volterra equations by a system of algebraic equations.  
Izv. vys. ucheb. zav.; mat. no.5:24-29 '63. (MIRA 16:11)



L 18072-63 EWT(d)/FCC(w)/BDS AFPTC/IJP(C) Pg-4  
 ACCESSION NR: AP3005611 3/0110/63/000/004/0033/0043

AUTHOR: Vinokurov, V. R. (Orsk) 57

TITLE: Stability of the solution of an infinite system of algebraic equations  
 obtained by approximation of Volterra linear integral equations 16

SOURCE: IVUZ. Matematika, no. 4, 1963, 33-43

TOPIC TAGS: Volterra equation, stability, approximation, algebraic equations

ABSTRACT: The author is concerned with the stability of infinite systems of the form

$$y(x_m) = f(x_m) + \sum_{p=0}^{m-1} B_{mp} K(x_m, x_p) y(x_p) \quad (1)$$

whose origins are given in the title. Various theorems are proved giving sufficient conditions for stability and instability. Below is an illustrative result:

Let  $K_{mp} = B_{mp} K(x_m, x_p)$ ,  $y_p = y(x_p)$ ,  $f_p = f(x_p)$ .

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ACCESSION NR: AP3005611

Then one obtains a system of algebraic equations

$$y_m = f_m + \sum_{p=0}^{m-1} K_{mp} y_p \quad (2)$$

Let

$$\begin{aligned} K_{mp}^{(n)} &= K_{mp}, \\ K_{mp}^{(n)} &= \sum_{r=p+1}^{m-1} K_{mr}^{(n-1)} K_{rp}^{(1)} = \sum_{r=p+1}^{m-1} K_{mr}^{(1)} K_{rp}^{(n-1)} \end{aligned} \quad (3)$$

and

$$R_{mp} = \sum_{q=1}^n K_{mp}^{(q)} = \sum_{q=1}^{m-p} K_{mp}^{(q)}. \quad (4)$$

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ACCESSION NR: AP3005611

The solution of (2) is called stable if for each  $\epsilon > 0$  there is a  $\delta > 0$  such that for any vector  $f_m$  satisfying  $\|f_m\| < \delta$  for all  $m = 0, 1, 2, \dots$ , the solution of (2) satisfies  $\|y_m\| < \epsilon$  for all  $m = 0, 1, 2, \dots$ . Otherwise the solution of (2) is called unstable.

Theorem 1. In order for the solution of (2) to be stable it is necessary and sufficient that there exist a number  $B$  such that for all  $m = 0, 1, 2, \dots$

$$\sum_{p=0}^{m-1} |R_{mp}| < B. \quad (5)$$

Orig. art. has: 47 formulas.

ASSOCIATION: none

SUBMITTED: 17Dec60

SUB CODE: MM

DATE ACQ: 27Aug63

NO REF SOV: 006

ENCL: 00

OTHER: 000

Card 3/3

L 18072-63 EWT(d)/FCC(w)/BDS AFFTC/IJP(C) Pg-4  
 ACCESSION NR: AP3005611 8/0140/63/000/004/0033/0043

AUTHOR: Vinokurov, V. R. (Orsk)

TITLE: Stability of the solution of an infinite system of algebraic equations  
 obtained by approximation of Volterra linear integral equations

SOURCE: IVUZ. Matematika, no. 4, 1963, 33-43

TOPIC TAGS: Volterra equation, stability, approximation, algebraic equations

ABSTRACT: The author is concerned with the stability of infinite systems of the form

$$y(x_m) = f(x_m) + \sum_{p=0}^{m-1} B_{mp} K(x_m, x_p) y(x_p) \quad (1)$$

whose origins are given in the title. Various theorems are proved giving sufficient conditions for stability and instability. Below is an illustrative result:

Let  $K_{mp} = B_{mp} K(x_m, x_p)$ ,  $y_p = y(x_p)$ ,  $f_p = f(x_p)$ .

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L 18072-63

ACCESSION NR: AP3005611

Then one obtains a system of algebraic equations

$$y_m = f_m + \sum_{p=0}^{m-1} K_{mp} y_p \quad (2)$$

Let

$$K_{mp}^{(n)} = K_{mp}, \quad K_{mp}^{(n)} = \sum_{r=p+1}^{m-1} K_{mr}^{(n-1)} K_{rp}^{(n)} = \sum_{r=p+1}^{m-1} K_{mr}^{(n)} K_{rp}^{(n-1)} \quad (3)$$

and

$$R_{mp} = \sum_{q=1}^n K_{mp}^{(q)} = \sum_{q=1}^{n-p} K_{mp}^{(q)}. \quad (4)$$

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ACCESSION NR: AP3005611

The solution of (2) is called stable if for each  $\epsilon > 0$  there is a  $\delta > 0$  such that for any vector  $f_m$  satisfying  $\|f_m\| < \delta$  for all  $m = 0, 1, 2, \dots$ , the solution of (2) satisfies  $\|y_m\| < \epsilon$  for all  $m = 0, 1, 2, \dots$ . Otherwise the solution of (2) is called unstable.

Theorem 1. In order for the solution of (2) to be stable it is necessary and sufficient that there exist a number  $B$  such that for all  $m = 0, 1, 2, \dots$

$$\sum_{p=0}^{m-1} |R_{mp}| < B. \quad (5)$$

Orig. art. has: 47 formulas.

ASSOCIATION: none

SUBMITTED: 17Dec60

SUB CODE: MM

DATE ACQ: 27Aug63

NO REF SOV: 006

ENCL: 00

OTHER: 000

Card 3/3

L 21121-65 EWT(d) PG-4 IJP(c)/AFWL/ESD(dp)  
 ACCESSION NR: AP5002235

S/0110/64/000/006/0024/0031

AUTHOR: Vinokurov, V. R. (Orsk)

TITLE: Method for studying asymptotic properties of a system of Volterra integral equations

SOURCE: IVUZ. Matematika, no. 6, 1964, 24-31

TOPIC TAGS: integral equation, asymptotic property

ABSTRACT: Definition 1. The matrix

$K(x, s) \in A_{r, n}$

$$\text{if } K(x, s) = H(x, s) e^{\int_{\tau(s)}^x \tau(s) ds}, \text{ where } \lim_{x \rightarrow \infty} \sup_{s < x} \int_s^x |H(x, s)| e^{u(x-s)} ds = 0. \quad (1)$$

Definition 2. The system

$$y^{(l)}(x) = f^{(l)}(x) + \sum_{i=1}^n \int_a^x K_{li}(x, s) y^{(i)}(s) ds \quad (l = 1, 2, \dots, n). \quad (2)$$

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ACCESSION NR: AP5002235

is called L-diagonal if

$$K(x, s) = [K^{(1)}(x, s)] \times \dots \times [K^{(p)}(x, s)] \times [K^{(p+1)}(x, s)] \times \dots \times [K^{(m)}(x, s)], \quad (3)$$

where

$$K_{ij}^{(l)}(x, s) = \begin{cases} a_i(x) b_j(s) & \text{for } i = j, \\ 0 & \text{for } i \neq j \end{cases}$$

and for all  $\eta > 0$   $K^{(l)}(x, s) \in A_{\eta, \eta}$  ( $l = 1, 2, \dots, m$ ).

The author gives various conditions for a matrix to satisfy Definition 1, and also the conditions under which system (2) can be put into L-diagonal form. Orig. art. has: 31 formulas.

ASSOCIATION: none

SUBMITTED: 03May63

ENCL: 00

SUB CODE: MA

NO REF SOV: 002

OTHER: 000

Card 2/2



VINOKUROV, V.R. (g.Orsk)

Determination of dynamic limit points in general dynamic systems.  
Izv. vys. ucheb. zav.; mat. no.3:36-38 '64. (MIRA 17:12)

1st and 2nd Grades

Processes and Properties Index

18

VILICKUROV, V.V.

Investigation of the methods for the production of chromium oxide for polishing hardened steel. V. V. Vinokurov and B. N. Moskvina. *Opticheskii Zhurnal* Prom. 6, No. 7, 8-13 (1936); *Chem. Zentr.* 1937, 1, 1908-9.

Investigations on the raw materials and the manner of producing  $Cr_2O_3$  from  $K_2Cr_2O_7$  and S showed that the difference between the polishing or grinding properties of the oxides prepd. from com. and from pure  $K_2Cr_2O_7$  is due to the higher Ca content of the com.  $K_2Cr_2O_7$ . Addn. of Ca salts improved the oxide obtained from the pure  $K_2Cr_2O_7$ . Sand B compounds were without influence. A reducing atm. during the heating of the oxide had an undesirable effect on the properties of the polish. The best properties were shown by an oxide produced from com.  $K_2Cr_2O_7$  or  $(NH_4)_2Cr_2O_7$  and heated at  $1600^\circ$ . Microscopic investigation of the best oxide showed dark green, rounded crystals. No difference between the oxides prepd. from materials of varying purity could be detected by x-ray investigation.

M. G. Moore

OPEN

COMMON ELEMENTS

MATERIALS INDEX

ASD-51A METALLURGICAL LITERATURE CLASSIFICATION

REASON SYMBOLIC

REASON SYMBOL

REASON SYMBOL

9(2,6)

PHASE I BOOK EXPLOITATION

SOV/1761

Vinokurov, V.V., and M.M. Stepankov

Tekhnika izmereniya osnovnykh elektricheskikh parametrov priyemno-usilitel'nykh lamp (Techniques in Measuring the Basic Electrical Parameters of Receiver Amplifier Tubes) Moscow, Gosenergoizdat, 1958. 205 p. 18,000 copies printed.

Ed.: A.A. Zhigarev; Tech. Ed.: N.I. Borunov.

**PURPOSE:** This book is intended for engineers and technicians of vacuum-tube factories and for students specializing in vacuum-tube techniques at institutes and tekhnikums. It may also be useful to specialists interested in the problems of tube testing.

**COVERAGE:** The authors describe various methods of measuring the electric parameters of receiver amplifier tubes. Part of the book is devoted to the problems of the design and construction of testing equipment. In the foreword the authors explain that most works in this field deal with the laboratory testing of tubes. This book

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Techniques in Measuring (Cont.)

SOV/1761

deals with testing techniques for production purposes. Chapters 1 to 4 were written by Engineer M.M. Stepankov, Chapter 5 and Sections 8,11, and 12 of Chapter 4 by Engineer V.V. Vinokurov. The authors thank Engineer L.D. Orabinskaya for the practical checking of some arrangements and for assistance in editing. There are 27 references, of which 22 are Soviet, 3 English, 1 German, and 1 Czech.

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Techniques in Measuring (Cont.)

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Bibliography

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AVAILABLE: Library of Congress

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JP/jb  
7/8/59

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[Techniques of measuring the principal electrical parameters of  
receiving tubes] Tekhnika izmereniia osnovnykh elektricheskikh  
parametrov priemno-usilitel'nykh lamp. Moskva, Gos. energ. izd-vo,  
1958. 205 p. (MIRA 11:11)

(Electron tubes)



VINOKUROV, V.Ya., inzh.

Automatic control of auxiliary operations on presses.  
Mekh. i avtom.proizv. 16 no.1:22-24 Ja '62. (MIRA 15:1)  
(Electronic control)  
(Power presses)

VINOKUROV, V.Ya.

Automatic control of a 315-ton hydraulic press. Kuz.-shtam.  
proizv. 4 no.10:43 0 '62. (MIRA 15:12)  
(Hydraulic presses) (Automatic control)

IVANOV, A.I.; TIMOFEYEV, V.V.; VINOKUROV, V.Ye.; LEBEDEV, O.A.

Electrolysis of titanium tetrachloride in fused chlorides. Titan  
i ego splavy no.6:145-152 '61. (MIRA 14:11)  
(Titanium--Electrometallurgy)

VINOKUROV, IA. B.

Uskorit' oborachivaemost' oborotnykh sredstv. [To speed up the turnover of revolving funds ]. (Rechnoi transport, 1949, no. 4, p. 5-7). DLC: TC691.Z4

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress, Reference Department, Washington, 1952, Unclassified.

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Credit and computing operation in river transport Moskva, Izd-vo Ministerstva  
rechnogo flota SSSR, 1952. 98 p. (53-33769)

HE675.V5

1. Inland water transportation - Russian.
2. Accounting.

... .., ... .., ... ..; ... .., ... ..; ... .., ... ..,  
...

... .. of an ... .. composition glass bath. ... .. 1 ... .. 22 no. 61  
... .. 1965. (NIRA 1849)

1. Gusevskoy filial Gosstatiznennogo nauchno-issledovatel'skogo  
instituta sterila (for Bakteriy) d. Tsyuminskij zavod meditsin-  
skogo stekla (for Bukharov, Vinokurov).

KORNEVA, N.K.; DOROFYEV, G.A.; GRINEVICH, I.P.; VINOKUROV, Ye.B.

Determining the optimum frequency of reversing the fuel spray  
in open-hearth furnaces. Metallurg 9 no.5:22-23 My '64.  
(MIRA 17:8)

1. Donetskii filial Ukrainskogo nauchno-issledovatel'skogo  
instituta metallov i zavod im. Il'icha.

KORNEVA, N.K.; ANDREYEV, V.L.; DOROFYEV, G.A.; GRINEVICH, I.P.; VINOKUROV,  
Ye.B.; TKACHENKO, V.A.

Study of the operation of ports in heavy duty open-hearth  
furnaces. Stal' 25 no.4:324-325 Ap '65. (MIRA 18:11)

1. Donetskii institut chernoy metallurgii.



VINOKUROV, Ye.F.

Iteration method for solving elastoplastic problems of soil  
mechanics as applied to moraine bases. Inzh.-fiz. zhur. 8  
no.1:98-104 Ja '65. (MIRA 18:3)

1. Institut stroitel'stva i arkhitektury, Minsk.

VINOKUROV, Ye.F.

Rheologic model of ground moraine. Dokl. AN BSSR 7 no.5:339-  
343 My '63. (MIRA 16:12)

1. Institut stroitel'stva i arkhitektury AN BSSR. Predstavleno  
akademikom AN BSSR K.I. Lukashevym.

VINOKUROV, Ye.F., kand. tekhn. nauk, dots.

Methods for determining the plasticity of moraine soils.  
Sbor. nauch. rab. Bel. politekh. inst. no.77:23-30 '59.  
(MIRA 13:3)

(Moraines) (Soil mechanics)

SOV/124-57-7-8388

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 7, p 141 (USJR)

AUTHOR: Vinokurov, Ye. F.

TITLE: A Proof of the Applicability of the Electrohydrodynamic-analogy Method to Stress Determinations in the Case of Structure Foundations  
(Dokazatel'stvo o vozmozhnosti primeneniya metoda E.G.D.A. dlya opredeleniya napryazheniy v osnovanii sooruzheniy)

PERIODICAL: Tr. Gor'kovsk. inzh.-stroit. in-ta, 1956, Nr 25, pp 103-107

ABSTRACT: Bibliographic entry

Card 1/1

VINOKUROV, Yevgeniy Fedorovich; TURTSEVICH, L., red.izd-va; VOLOKHA-  
NOVICH, I., tekhn.red.

[Designing foundations; industrial, residential, and public-  
building construction] Raschety osnovanii i fundamentov;  
promyshlennoe i grazhdanskoe stroitel'stvo. Izd.2., perer. i  
dop. Minsk, Izd-vo Akad.nauk BSSR, 1960. 295 p. (MIRA 13:7)  
(Foundations)

VINOKUROV, Ye.F.; MAKARUK, P.N.; BOL'SHEDONOV, I.I.

Study of the character of the performance of series IL-03-02 footing  
blocks in a sandy foundation bed. Osn., fund. i mekh. grun. 6 no. 6:19-  
22 '64. (MIRA 18:1)

VINOKUROV, Yevgeniy Fedorovich; MARIKS, L., red. izd-va; SIDERKO, N.,  
tekhn. red.

[Structural properties of morainic soil] Stroitel'nye svoistva  
morennykh gruntov. Minsk, Izd-vo AN BSSR, 1962. 122 p.  
(MIRA 15:12)

(Moraines) (Soil mechanics)

VINOKUROV, Ye.F.(Minsk)

"Foundations and footings" by G.K.Klein, P.P.Smirenkin. Reviewed  
by E.F.Vinokurov. Osn., fund.i mekh.grun. 4 no.5:31-32 1/62.  
(MIRA 15:12)

(Foundations)

(Klein, G.K.)(Smirenkin, P.P.)



VINOKUROV, Ye.F.

Moraine earth as a polyphase system. Dokl. AN BSSR 3 no.11:  
459-462 N '59. (MIRA 13:4)

1. Predstavleno akademikom AN BSSR Ye.I. Lukashevym.  
(Moraines)

VINOKUROV, Ye.F. [Vinakurau, Ye.F.]; BOL'SHADOWOV, I.I. [Bal'shadonau, I.I.]

Morainic soils as building foundations. Vestsi AN BSSR. Ser.  
fiz.-tekh.nav. no.4:113-116 '58. (MIRA 12:4)  
(White Russia--Moraines) (Soil mechanics)

VINOKUROV, Ya.F.; ATAYEV, S.S., kand. tekhn. nauk, red.; ALEKSANDROVICH, Kh.,  
tekhn. red.

[Methods for calculating bases and foundations; industrial and  
engineering] Metody raschetov osnovanii i fundamentov; promysh-  
lennoe i grazhdanskoe stroitel'stvo. Minsk, Izd-vo Akad. nauk  
Belorusskoi SSR, 1958. 254 p. (MIRA 11:10)  
(Foundations) (Soil mechanics)

VINOKUROV, Ye.F., kand.tekhn.nauk

Proving the possibility of applying the electrohydrodynamic  
analogy method for determining stresses in structural foundations.  
Trudy GISI no.25:103-107 '56. (MIRA 11:5)  
(Foundations) (Strains and stresses)

BRESLER, S.Ye.; RUBINA, Kh.M.; VINOKUROV, Yu.A.

Enzymatic transfer of phosphate groups from ribonucleic acid to  
creatine [with summary in English]. Biokhimiia 22 no.5:794-798  
S-O '57. (MIRA 11:1)

1. I Medinstitut im. I.P.Pavlova i Institut vysokomolekulyarnykh  
soyedineniy Akademii nauk SSSR, Leningrad.

(TRANSPHOSPHORYLASES,

myokinase, prod. of phosphorylate ribonucleic acid by  
enzymatic transfer of phosphate from ATP (Rus))

(RIBONUCLEIC ACID,

phosphorylation by myokinase t transfer of phosphate  
from ATP (Rus))

(ADENYLPYROPHOSPHATE,

transfer of phosphate by myokinase in phosphorylation  
of ribonucleic acid (Rus))

ANDREYEVA, N.G., inzh.; VINOKULOV, Yu.G., inzh., DOROSHENKO, V.G., inzh.

Automatic line for grinding and polishing pipe-type parts.  
Mekh. i avtom.proizv. 19 no.2:9-10 F '65.

(MIRA 18:3)

SMIRNOV, A.I., kand.tekhn.nauk; PETROVA, V.N., inzh.; SKVORTSOV, O.S.  
kand.tekhn.nauk; Prinsipialni uchastiye: VINOGRADOVA, Ye.I.,  
inzh.; ALEJNIKOVA, G.S., inzh.; KOSHINA, A.V., teknik;  
PETUSHKOVA, I.K., inzh., red.

[Efficient kinds of track structures of narrow-gauge railroads  
(750 mm.gauge).] Ratsional'nye tipy verkhnego stroeniia puti  
zheleznykh dorog (kolei 750mm). Moskva, Izd-vo "Transport,"  
1964. 148 p. (Moscow. Vsesoyuznyy nauchno-issledovatel'skiy  
institut zheleznodorozhnogo transporta. Trudy, vol. 271)  
(MIRA 17:5)

VINOGRADOVA, Z.A.

Some biochemical aspects of a comparative study of the  
plankton of the Sea of Azov and the Black and Caspian Seas.  
Okeanologiya 4 no.2:232-242 '64. (MIRA 17:5)

1. Odesskaya biologicheskaya stantsiya AN UkrSSR.



SKOBLIKOVA, G.I.; VINOKUROVA, A.S.

Determination of the wettability characteristic of rocks. Prikl.  
geofiz. no.33:176-189 '62. (MIRA 15:10)  
(Oil sands—Permeability)

S/078/61/006/008/015/018  
B127/B226

AUTHORS: Palkin, A. P., Marshakova, T. A., Vinokurova, A. G.  
TITLE: Reactions of indium chloride with aluminum in the melt  
PERIODICAL: Zhurnal neorganicheskoy khimii, v. 6, no. 8, 1961, 1971-1972

TEXT: The authors studied the system  $\text{InCl}_3 + \text{Al} \rightarrow \text{AlCl}_3 + \text{In}$  by means of thermographical, chemicoanalytical, and spectroscopic methods. 99.98% ohemically pure Al was used for the purpose. Anhydrous  $\text{InCl}_3$  was produced by chlorination of indium oxide in the presence of carbon at 600°C. The indium oxide was contained in poorly meltable glass cylinders in a circular furnace; the chlorine was dried in Tishchenko cylinders by concentrated  $\text{H}_2\text{SO}_4$ . Then,  $\text{H}_2\text{SO}_4$  was removed, the furnace heated, and after reaction,  $\text{InCl}_3$  was cooled in a  $\text{Cl}_2$ -containing  $\text{CO}_2$  flow. Working with hygroscopic  $\text{InCl}_3$  demanded various precautions, wherefore a modified Stepanov vessel was used. The Al and In weighed-in portions were filled into the vessel, and evacuated to  $5 \cdot 10^{-2}$  mm Hg. For the six reactions, a diagram was

Card 1/5

Reactions of indium...

S/078/61/006/000/015'010  
B127/B226

recorded by the Kurnakov pyrometer. The reaction proceeded in the range of 415 - 450°C showing a high exothermic effect. The metallic regulus obtained was washed in hot water and weighed. The quantity of aluminum consumed in the reaction was calculated by the method of I. P. Palyura (Ref. 1: Zh. neorgan. khimii, 4, 236 (1959)), and part of the regulus was analyzed by the polarographic method. It was shown that the reaction proceeded vigorously toward the formation of indium. The regulus was melted again with  $\text{InCl}_3$ , and by spectrum analysis, the indium obtained proved to be not absolutely free from Al. The analytical results are given in two figures (Figs. 2, 3) and a table. There are 3 figures, 1 table, and 2 Soviet-bloc references.

SUBMITTED: December 8, 1960

PALKIN, A.P.; MARSHAKOVA, T.A.; VINOKUROVA, A.S.

Reaction between indium chloride and aluminum in a melt. (MIRA 14:8)  
Zhur.neorg.khim. 6 no.8:1971-1972 Ag '61.  
(Indium chloride) (Aluminum)

VINOKUROVA, B.I.

Local application of streptomycin in oral and laryngeal tuberculosis. Prob.tuberk., Moskva No.1:67-68 Jan-Feb 51. (CIAML 20:6)

1. Of the Second Suburban Tuberculosis Hospital (Head Physician--Ye.Ye.Goncharenko).

VINOKUROVA, E. B.

FA 20T104

USSR/Telephony  
Communications

Sep 1947

"From Single Stakhanovite to Stakhanovite Brigades  
and Sections," E. B. Vinokurova, 2 pp

"Vestnik Svyazi, Elektro-Svyaz'" Vol VII, No 9 (90)

Development of the Stakhanovite method of creating  
master technicians from the beginning under Nikolay  
Rossiyskiy to the present day. Discusses progress  
in the Central International Telephone Station.

20T104

MALYUTINA, T.M.; FUTORYANSKAYA, Ye.L.; VINOKUROVA, F.A.

Differential spectrophotometric method for determining niobium.  
Zav.lab. 28 no.5:540-542 '62. (MIRA 15:0)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut  
redkometallicheskey promyshlennosti.  
(Niobium--Spectra)

S/032/62/028/005/001/009  
B117/B101

AUTHORS: Malyutina, T. M., Futoryanskaya, Ye. L., and Vinokurova, F. A.

TITLE: Determination of niobium by the spectrophotometric differential method

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 5, 1962, 540 - 542

TEXT: The method recommended as the most convenient for niobium determination, is based on measuring the optical density of the yellow niobium complex with thiocyanic acid in an homogeneous acetone medium. The optimum concentration of the zero solution is limited by the slit width of the CF-4 (SF-4) spectrophotometer and was experimentally found to be 0.75 mg of  $Nb_2O_5$  in 50 ml (slit width = 1.5 mm). A red light filter Y4(-2) (UFS-2) had to be fitted to prevent diffuse light from affecting the measurement results at  $\lambda = 390 \text{ m}\mu$ . The method was used to determine commercial niobium pentoxide, potassium fluoroniobate and the niobates of barium and lead and gave results within 0.5 - 1% of the values obtained by gravimetric analysis. ✓

Card 1/2



Determination of niobium by the ...

S/032/62/028/005/001/009  
B117/B101

There is 1 table.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy  
institut redkometallicheskey promyshlennosti (State Design  
and Planning Scientific Research Institute of the Rare Metal  
Industry)

Card 2/2

*Vinokurova, G. G.*

7  
0  
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New synthesis of irones. I. K. Sarycheva, G. A. Vorob'-  
ova, A. S. Vasilenko, G. G. Vinokurova, S. A. Elkina, and  
N. A. Prokhorzhenskii. J. Gen. Chem. U.S.S.R. 25, 1729-  
33 (1953) (Engl. translation).—See C.A. 50, 7090d.

B. M. R.

6  
PM

**"APPROVED FOR RELEASE: 09/01/2001**

**CIA-RDP86-00513R001860020003-1**

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**APPROVED FOR RELEASE: 09/01/2001**

**CIA-RDP86-00513R001860020003-1"**

Allylic rearrangements. XII. Action of organomagnesium compounds and of magnesium upon isomeric ethoxy- and butoxychloropentenes. A. N. Pudovik and G. M. Vinokurova (Kazan State Univ.). *J. Gen. Chem U.S.S.R.* 10, No. 10, 2345-54 (1949) (English translation).—See *C.A.* 44, 1890g.  
E. J. C.

VINOKUROVA, G. M.

USSR/Chemistry - Synthesis

Card 1/1 : Put. 40 - 9/22

Authors : Arbuzov, B. A., and Vinokurova, G. M.

Title : Reactions of dichloromethyl glycol ethers with sodium alcoholates

Periodical : Izv. AN SSSR. Otd. khim. nauk 5, 829-842, Sep-Oct 1953

Abstract : The reaction of chloromethylation of propylene glycol-1,2 and trimethylene glycol, which resulted in the formation of two hitherto unknown homologous dichloromethyl ethers, was investigated. The authors also studied the reactions of dichloromethyl ethers of ethylene glycol, propylene glycol-1,2-trimethylene glycol, butylene glycol-1,3 and butenediol-1,4 with methylate, ethylate, isopropylate, butylate and sodium isobutylate and described the products obtained from these reactions. Twelve references: 6-USSR; 1-French and 5-German (1860-1952). Tables.

Institution : The I. V. Lenin State University, Kazan

Submitted : May 19, 1953

Vinokurova, G. M.

Glycerol esters of pyrophosphoric acid. H. A. Arbutov, E. V. Nikonorov, O. N. Fedorova, G. M. Vinokurova, and E. G. Shishova (A. S. Arbutov Chem. Inst., Kazan).

slowly added 5 g of 817-82 (100%). Slow addition of the cooled and stirred and a base procedure.

Me<sub>2</sub>NPh, or Et<sub>3</sub>N, to 2 molar O CH<sub>2</sub> CH<sub>2</sub> O P<sub>2</sub> and with 2-3 parts Et<sub>2</sub>O at about -5° with stirring. After 3 hrs. at room temp. and distn. of the filtrate gave 90% (CH<sub>2</sub>O)<sub>2</sub>P<sub>2</sub>O, b. 110-1°, d<sub>4</sub> 1.4281, n<sub>D</sub><sup>20</sup> 1.4900. Similarly were obtained the following esters (% yield, b.p./mm., d<sub>4</sub> and n<sub>D</sub><sup>20</sup> shown):

(O CHMe CH<sub>2</sub> O P<sub>2</sub>O, 44.5, 82-3°/2-3, 1.2772, 1.4223; (O CH(CH<sub>2</sub>CH<sub>3</sub>) CH<sub>2</sub> O P<sub>2</sub>O, 44, 144-5°/2, 1.3120, 1.5130; (O CHMe CH<sub>2</sub> CH<sub>2</sub> O P<sub>2</sub>O, 34.8, 118-20°/2, 1.2329, 1.4715. These esters readily add Cu<sub>2</sub>X<sub>2</sub> and

S and react violently with H<sub>2</sub>O. Treatment of O CH<sub>2</sub> CH<sub>2</sub> O PCl with (RO)<sub>2</sub>PONa with cooling in Et<sub>2</sub>O gave, after separ. of the pptd. NaCl, the corresponding (CH<sub>2</sub>O)<sub>2</sub>POP, (OR)<sub>2</sub>, (R = Me, Et, Bu, 100% yield, b./mm., d<sub>4</sub>, n<sub>D</sub><sup>20</sup> given) Et, 60, 41-5°/2, 1.1630, 1.4357, Pr, 51, 94°/2, 1.1430, 1.4500, n<sub>D</sub><sup>20</sup> Pr, 47.4, 90-1°/2, 1.1392, 1.4515, Bu, 40.2, 104-5°/1.

Similarly were formed the following

1.320, 1.450; Pr, 40, 100°/2, 1.130, 1.450; Bu, 40, 100°/2, 1.130, 1.450.

O CHMe CH<sub>2</sub> CH<sub>2</sub> O POP(OR)<sub>2</sub>; Et, 53.3, 111-113°/4, 1.363, 1.4561; Pr, 30.4, 110-11°/4, 1.4001, 1.4633, 1.4561; Bu, 23, 147-50°/3, 1.4301, 1.4633, 1.4561; Pr, 42.7, 98-102°/2, 1.0845, 1.4460; Bu, 40.1, 152-5°/2, 1.0845, 1.4460.

O CH(CH<sub>2</sub>CH<sub>3</sub>) CH<sub>2</sub> O POP(OR)<sub>2</sub>; Et, 44.5, 110-11°/4, 1.4001, 1.4633, 1.4561; Pr, 30.4, 110-11°/4, 1.4001, 1.4633, 1.4561; Bu, 23, 147-50°/3, 1.4301, 1.4633, 1.4561.

possess the usual properties of the phosphates. The esters of the higher unsym. esters are reduced by the synantization reaction during distn.

G. M. Kosolapoff

Some cases of information...  
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AcH, the resulting H<sub>2</sub>O being removed by 2 g. H<sub>2</sub>O. After  
 0.5 hr. at room temp. the mixt. was distd., yielding 30.6%  
 EtO<sub>2</sub>PSi<sub>2</sub>SCHMeSEt, b<sub>p</sub> 118-10° at 1.5240, d<sub>4</sub> 1.347.  
 The same product was obtained in 90% yield from 20 g.  
 EtO<sub>2</sub>PSi<sub>2</sub>H, 4.6 g. AcH, and 6.6 g. EtOH, treated with  
 0% Na<sub>2</sub>CO<sub>3</sub> and H<sub>2</sub>O, and not distd. at last at 1.5230  
 and b<sub>p</sub> 1151. Similarly in 4 hrs. EtO<sub>2</sub>PSi<sub>2</sub>H gave 49%  
 of the same product, b<sub>p</sub> 118-10° at 1.5240, d<sub>4</sub> 1.347.  
 in this case could not be used without the impu-

12-124



ARBUZOV, B.A.; NIKONOROV, K.V.; VINOKUROVA, G.M.; FEDOROVA, O.N.;  
SHISHOVA, Z.G.

Certain glycol esters of pyrophosphorous acid. Izv.Kazan.fil.  
AN SSSR Ser.khim. nauk. no.2:3-17 '55. (MLRA 10:5)  
(Glycols) (Pyrophosphorous acid)

VINOKUROVA, G.M., NIKONOV, N.V., SPERANSKAYA, Z.G. (Chem. Inst. im. Acad. A.Ye. Arbuzov, Kazan Aff. AS USSR)

"Synthesis of Some Esters of alpha-Dialkylphosphon-beta, beta<sub>1</sub>, beta<sub>2</sub>-trichloroethyl-phosphoric Acid and Deratives of Pyrophosphoric Acid (sintez nekotorykh efirov alpha-dialkilfosfon-beta, beta<sub>1</sub> beta<sub>2</sub>-trikhloretilfosfornoy kisloty i proizvodnykh pirofosfornoy kisloty)

Chemistry and Uses of Organophosphorous Compounds  
(Khimiya i primeneniye fosfororganicheskikh soedineniy),  
Trudy of First Conference, 8-10 December 1955, Kazan,  
pp. Published by Kazan Aerial. AS USSR, 1957  
223-231,

ACC NR: AP6025627

SOURCE CODE: UR/0413/66/000/013/0079/0079

INVENTORS: Vinokurova, G. M.; Fattakhov, S. G.

ORG: none

TITLE: A method for obtaining phosphorus-containing polymers. Class 39, No. 183394

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 79

TOPIC TAGS: polymer, phosphorus compound, polymerization initiation, polymerization, organic glass

ABSTRACT: This Author Certificate presents a method for obtaining phosphorus-containing polymers of cross-linked structure by initiating block polymerization of a phosphorus-containing allyl compound. To obtain thermally stable organic glasses, allyl, methallyl acid derivative, or sulfo acid of tertiary phosphine derivative is used as an allyl compound.

SUB CODE: 11/ SUBM DATE: 07May65

07/

Card 1/1

UDC: 678.85

ARBUZOV, B.A.; VINOKUROVA, G.M.

Synthesis of bifunctional organophosphorus compounds. Report  
No.2: Addition of butylphosphine to unsaturated compounds. Izv.  
AN SSSR.Otd.khim.nauk no.3:502-506 Mr '63. (MIRA 16:4)

1. Khimicheskiy institut im. A.Ye.Arbuzova AN SSSR.  
(Phosphine) (Unsaturated compounds)

VINOKUROVA, G. M., kand. khim. nauk

Valuable preparations for the control of agricultural pests.  
Vest. AN SSSR 33 no.1:42-44 Ja '63. (MIRA 16:1)

(Agricultural chemicals)

ARBUZOV, B.A., VINOKUROVA, G.M., PERFILYEVA, I.A.

The synthesis of certain bifunctional compounds containing phosphorus.

Khimiya i Primeneniye Fosfororganicheskikh Soedineniy (Chemistry and application of organophosphorus compounds) A. YE. ARBUZOV, Ed.  
Publ. by Kazan Affil. Acad. Sci. USSR, Moscow 1962, 632 pp.

Collection of complete papers presented at the 1959 Kazan Conference on Chemistry of Organophosphorus Compounds.

33981

S/062/62/000/002/006/013

B117/B138

5.0630

AUTHORS: Arbuzov, B. A., Vinokurova, G. M., and Aleksandrova, I. A.

TITLE: Synthesis of bifunctional organophosphorus compounds.  
1. Addition of phenyl phosphine to unsaturated compounds

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 2, 1962, 290-295

TEXT: It had been shown previously (Ref. 3: B. A. Arbuzov, G. M. Vinokurova, and I. A. Perfil'yeva, Dokl. AN SSSR, 127, no. 6) that phenyl phosphine adds to acrylate, methacrylate, and allyl alcohol under formation of bifunctional adducts (yield 50-70 %). In the present investigation the addition of phenyl phosphine, allyl acetate, and 2-methyl-5-vinyl pyridine was performed by heating the reagents both without catalyst and with azo-bis-isobutyric acid dinitrile. In the absence of the catalyst, phenyl phosphine quite readily adds to methyl vinyl pyridine (adduct 50 %), but with far more difficulty to allyl amine and allyl acetate. In the presence of azo-bis-isobutyric acid dinitrile, the yield of adducts could be increased to 60 and even 80 per cent. All

Card 1/3

33981

S/062/62/000/002/006/013

B117/B138

## Synthesis of bifunctional...

of the synthesized products were oxidized either with oxygen or with hydrogen peroxide. In the former case oxygen was sent through the product heated to 130-140°C for 10-15 hr, and the product was then distilled in vacuum. Oxidation with hydrogen peroxide was performed by the method described in Ref. 2 (see below). Phosphine sulfoxides were obtained by addition of a determined amount of sulfur to corresponding tertiary phosphines. Oxygen and sulfur readily add to the tertiary phosphines obtained. The resulting phosphine oxides and phosphine sulfoxides contain two functional groups each. They are either colorless or yellowish thick liquids with a weak unpleasant odor or solid crystalline substances. Difficulties were met in calculating the molecular refraction of phosphine oxides and phosphine sulfides. The mean value calculated for the atomic refraction of phosphorus was 6.02 with maximum deviations of +0.32 -0.26, thus diverging from Kosolapoff's (Ref. 4: see below) 5.5. Saponification of bis-(2-carbomethoxy ethyl)phenyl phosphine oxide led to bis-(2-carboxy ethyl)phosphine oxide, melting point -99-202°C. This compound had first been obtained by saponification of bis-(2-cyanethyl)phenyl phosphine (Ref. 2). There are 3 tables and 4 references: 1 Soviet and 3 non-Soviet. The two references to English-

Card 2/3



33981

Synthesis of bifunctional ...

S/062/62/000/002/006/013  
B117/B138

language publications read as follows: Ref. 2 M. M. Kuechut, J. Hechenbleikner et al., J. Amer. Chem. Soc. 81, 1103 (1959); Ref. 4 G. M. Kosolapoff, R. F. Struck, Proc. Chem. Soc., October (1960).

ASSOCIATION: Khimicheskiy institut Kazanskogo filiiala Akademii nauk SSSR  
(Chemical Institute of the Kazan' Branch of the Academy of Sciences USSR)

SUBMITTED: July 14, 1961

✓

Card 3/3

5 (2, 3)  
AUTHORS:

Arbuzov, B. A., Academician,  
Vinokurova, G. M., Perfil'yeva, I. A.

SOV/20-127-6-20/51

TITLE:

Addition of Phenylphosphine to Unsaturated Compounds

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 6, pp 1217-1220  
(USSR)

ABSTRACT:

After a survey of publications (Refs 1-4), the authors indicate brief results of their investigations made in recent years on the addition mentioned in the title: they intended to obtain bifunctional, phosphorus-containing compounds. It has become evident that phenylphosphine, in the presence of a catalyst and on heating, can be easily added to the acrylic- and methacrylic-acid esters. Besides the addition products, small quantities of oxides of the corresponding phosphines are produced by oxidation of the tertiary phosphines forming. The addition of phenylphosphine to allyl alcohol proceeds under the influence of catalysts which produce free radicals (of the dinitryl-azo-bis-isobutyric acid, see Equation). Table 1 shows the compounds obtained and their constants. For obtaining various derivatives, the authors repeated the experiments by Mann (Ref 3). Here,  $\beta$ -cyano-ethyl-phenylphosphine, di-( $\beta$ -cyano-ethyl)-phenylphosphine, and the oxide

Card 1/2

Addition of Phenylphosphine to Unsaturated Compounds

SOV/20-127-6-20/51

of the latter, were isolated. By a reduction of the di-( $\beta$ -cyano-ethyl)-phenylphosphine by means of lithium aluminum hydride, di-( $\beta$ -amino-propyl)-phenylphosphine was produced. The tertiary phosphines obtained are easily oxidized by the atmospheric oxygen (as derivatives of trivalent phosphorus) into the corresponding phosphine oxides, and can also add sulphur. Table 2 shows constants of the 3 last-mentioned compounds obtained. Finally, the authors carried out the interaction reactions of phenylphosphine with acrolein, methacrylic acid, ethylene oxide, and allyl bromide. There are 2 tables and 5 references.

ASSOCIATION: Institut organicheskoy khimii Kazanskogo filiala Akademii nauk SSSR (Institute of Organic Chemistry of the Kazan' Branch of the Academy of Sciences, USSR)

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Card 2/2

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(Pyrophosphoric acid)  
(Thiopyrophosphoric acids)

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Ministerstva zdavookhraneniya SSSR.

(KIDNEYS, physiol.

funct., eff. of blood transfusion, blood components and  
plasma substitutes)

(BLOOD TRANSFUSION

eff. on kidney funct.)

(PLASMA SUBSTITUTES, eff.

on kidney funct.)

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Bagdasarov)

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(POLYVINYLPIRROLIDONE—THERAPEUTIC USE)  
(KIDNEYS)

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VINOKUROVA, GP

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